UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7,9-13 and 15-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some *   c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments, see page 6, lines 15-24, filed 02 April 2008, with respect to the rejections under 35 U.S.C. § 101 have been fully considered and are persuasive. The rejections under 35 U.S.C. § 101 have been withdrawn.

2.   Applicant's arguments filed 02 April 2008 have been fully considered but they are not persuasive.

Regarding page 6, lines 2-14: Applicant's present amendments to the claims have been fully considered and are addressed in the present Response and in the prior art rejections below.

Regarding page 6, line 25 to page 8, line 8: *Applicant argues* that Reed (US Patent Application Publication 2002/0164052) does not teach "an extracting unit that extracts a feature index of a first color component and a feature index of a second color component in each of the blocks" as recited in claim 1.

Examiner replies that, through the use of tweaks, watermark data is embedded into each block of the image data [see para. 42, lines 8-22 of Reed]. The tweak level, which is used to embed the watermark data, corresponds to the feature index. There is a tweak level for each color CMYK, which gives at least a feature index of a first color (black) and a feature index of a second color (cyan, magenta or yellow) which is determined for each block, and extracted from each block and also used to determine how much the luminance component is tweaked (see figure 8 and para. 30 of Reed).

Regarding page 8, lines 9-20: *Applicant asserts* that Reed does not teach "a code embedding unit that embeds a predetermined code into the image data, by changing the feature index of the first color component based on the feature index of the second color component, using the information registered, and embeds one code corresponding to a pair of blocks, based on a magnitude relationship between the feature indices of color components related to the pair of blocks."

Examiner replies that Reed teaches embedding data, such as a watermark, into the image data (para. 11 and para. 33 of Reed). The embedding is performed by setting the amount of tweak level for the CMY colors to embed the data and have the overall luminance tweak balance out the tweak in the black color, thus changing the feature index of the first color component based on the feature index of the second color component, using the information registered (para. 30 of Reed). The watermark code is embedded redundantly, and thus corresponds to at least a pair of blocks (para. 42, lines 1-5 of Reed). The magnitude of the feature indices is modified between blocks so that the embedding is performed

consistently throughout the media (para. 42, lines 15-27 and para. 43 of Reed), and is thus based on a magnitude relationship between the feature indices of color components related to the pair of blocks.

Regarding page 8, line 21 to page 9, line 6: *Applicant argues* that the remaining claims addressed in the previous office action of 02 January 2008 are allowable either for similar reasons as claim 1, or due to their respective dependencies from an allegedly allowable independent claim.

Examiner replies that, since claim 1 has been shown to be taught by Reed, the remaining claims cannot therefore be deemed allowable for similar reasons or due to their respective dependencies.

Regarding page 9, lines 7-23: Newly added claim 19 has been fully considered and is fully addressed in the prior art rejections set forth below.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   **Claims 1, 3-4, 6-7, 9-10, 12-13, 15-16 and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Reed (US Patent Application Publication 2002/0164052).**

Regarding claims 1, 7 and 13: Reed discloses an image data processing apparatus (figure 12a (18) and para. 52 of Reed – *apparatus is computer which executes computer program*) comprising: a dividing unit (para. 52, lines 2-4 of Reed – *corresponding portion of stored computer program*) that divides image data into a plurality of blocks (figure 9 and para. 42, lines 1-5 of Reed); an extracting unit (para. 52, lines 2-4 of Reed – *corresponding portion of stored computer program*) that extracts a feature index of a first color component and a feature index of a second color component (figure 8 and para. 30 of Reed – *feature index of first color component and feature index of second color component indicate relative relationship of "tweak" levels established between at least one of CMY print colors and black*) in each of the blocks (para. 42, lines 8-22 of Reed – *tweaks performed and watermark embedded for each block*); a registration unit (para. 52, lines 2-4 of Reed – *corresponding portion of stored computer program*) that registers information about a correspondence between the feature index of the second color component and a change in the feature index for the first color component (para. 30, lines 1-11 of Reed – *if black color changed, CMY values altered by inverse amount*); and a code embedding unit (para. 52, lines 2-4 of Reed – *corresponding portion of stored computer program*) that embeds a predetermined

code into the image data (para. 11 and para. 33 of Reed – *data, such as watermark, is embedded*), by changing the feature index of the first color component based on the feature index of the second color component, using the information registered (para 30, lines 22-25 of Reed – *tweaking performed in order to hide image data*), and embeds one code corresponding to a pair of blocks (para. 42, lines 1-5 of Reed – *watermark code embedded redundantly, and thus corresponds to at least a pair of blocks*), based on a magnitude relationship between the feature indices of color components related to the pair of blocks (para. 42, lines 15-27 and para. 43 of Reed – *magnitude of feature indices modified between blocks so that the embedding is performed consistently throughout the media*).

Further regarding claim 7: The apparatus of claim 1 performs the method of claim 7.

Further regarding claim 13: The apparatus of claim 1 embodies a computer program (para. 52 of Reed) which performs the steps recited in claim 13.

Regarding claims 3, 9 and 15: Reed discloses that the registration unit registers information about a correspondence between the feature index of the second color component, a difference between the feature indices of the second color component related to a pair of blocks, and the change in the feature index for the first color component (para. 42 and para. 43 of Reed – *"tweaking" relationship between black component and the CMY components used to redundantly embed watermark in plurality of blocks, difference between feature indices of second color component related to at least a pair (plurality) of blocks determined and used to produce consistent embedding throughout the media*).

Regarding claims 4, 10 and 16: Reed discloses that the first color component is a yellow component (para. 30, lines 1-11 of Reed – *tweaking of second color component (black) determines tweaking of first color component (yellow) and other color components (cyan and magenta)*).

Regarding claims 6, 12 and 18: Reed discloses a code extracting unit (para. 52, lines 2-4 of Reed – *corresponding portion of stored computer program*) that extracts the code embedded into the image data (figure 15 and para. 76 of Reed – *watermark is extracted and analyzed*).

Regarding claim 19: Reed discloses an image data processing apparatus (figure 12a (18) and para. 52 of Reed – *apparatus is computer which executes computer program*) comprising: a code embedding unit (para. 52, lines 2-4 of Reed – *corresponding portion of stored computer program*) that embeds a predetermined code into image data (para. 11 and para. 33 of Reed – *data, such as watermark, is embedded*) by changing a feature index of a first color component of a block, based on a feature index of a second color component of the block (para 30, lines 22-25 and para. 42, lines 8-22 of Reed – *tweaking performed in order to hide image data; tweaks performed and watermark embedded for each block*), and embeds a code corresponding to a pair of blocks (para. 42, lines 1-5 of Reed – *watermark*

code embedded redundantly, and thus corresponds to at least a pair of blocks) based on a magnitude

relationship between feature indices of color components related to the pair of blocks (para. 42, lines 15-

27 and para. 43 of Reed – *magnitude of feature indices modified between blocks so that the embedding is*

performed consistently throughout the media).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the art to which said subject
> matter pertains. Patentability shall not be negatived by the manner in which the invention was
> made.

6.   **Claims 5, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed**

(US Patent Application Publication 2002/0164052) and DeProspero (US Patent Application

Publication 2002/0040648).

         Regarding claims 5, 11 and 17: Reed does not disclose expressly that the second color

component is a magenta component. However, Reed does disclose that the tweaking can be performed

such that the yellow component correlates with, but is different than, the magenta component (para. 30,

lines 11-18 of Reed – *yellow and magenta combine such that luminance is maintained at constant level; if*

magenta component increases, yellow component decreases by predetermined amount).

         DeProspero discloses adjusting the yellow component based on the value of the magenta

component (para. 45 of DeProspero).

         Reed and DeProspero are analogous art because they are from similar problem solving areas,

namely the adjustment and correction of color data printed by the physical ink of one primary color

through the modification of the amount of ink used for a different primary ink color. At the time of the

invention, it would have been obvious to a person of ordinary skill in the art to adjust the value of yellow

based on the value of magenta, as taught by DeProspero. Thus, the second color component is a magenta

component. Reed already teaches that magenta and yellow can be set with respect to each other.

Modifying Reed with respect to the teachings of DeProspero would simply require that magenta and

yellow are adjusted in opposition with each other, rather than in joint opposition to the black ink. The

motivation for doing so would have been to compensate for the physical limitations of the printed colors,

which are not always pure colors when physically printed (para. 44-45 of DeProspero – *different shades*

and qualities of varying desirability are used for magenta). Therefore, it would have been obvious to combine DeProspero with Reed to obtain the invention as specified in claims 5, 11 and 17.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES A. THOMPSON whose telephone number is (571)272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward L. Coles/   James A. Thompson
Supervisory Patent Examiner, Art Unit 2625   /J. A. T./
                                                                          Examiner, Art Unit 2625

28 May 2008